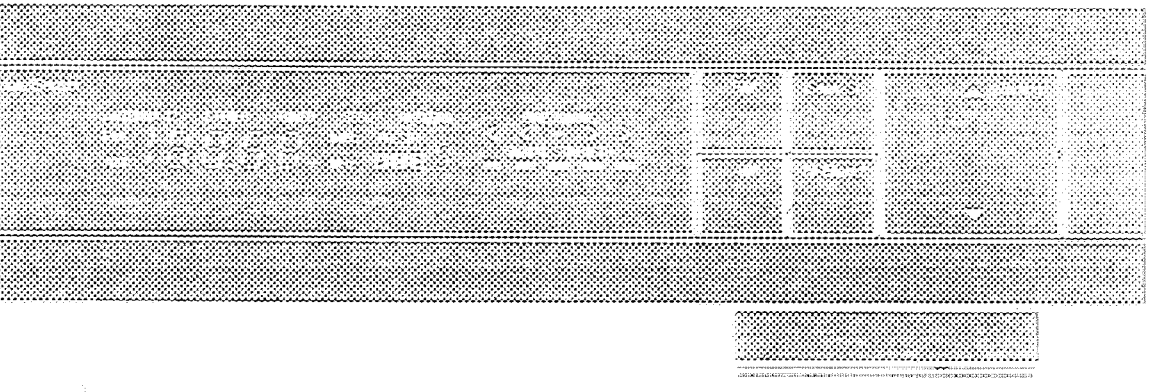
ED McCAFFERTY

TU9600/TU9400



harman/kardon

OWNER'S MANUAL

GENERAL INSTRUCTIONS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Power Supply

Plug this tuner only into domestic 120V AC outlets. Connecting the unit to an outlet supplying a higher voltage may create a fire hazard.

Handle the Power Cord Gently

- When disconnecting the plug from the AC outlet, pull on the plug itself, not on the cord. Pulling the cord may break the wire.
- Disconnect the plug from the AC outlet whenever the unit is to be left unused for an extended period of time.
- Do not place furniture or other heavy objects on the cord, and avoid dropping heavy objects on it. Also do not make a knot in the cord; this can damage the cord and cause a short circuit and consequent fire hazard.

Place of Installation

Place the tuner on a firm and level surface. Avoid installing it:

- In moist or humid places;
- Close to heating equipment or in places exposed to direct sunlight;
- In a direct draft from an air conditioner or in other very cold locations;
- In places subject to excessive vibration or dust;
- In poorly ventilated places.

Moving the Unit

Before moving the unit, be sure to unplug the power cord from the AC outlet and disconnect all wires to antennas and to other stereo components.

Do Not Open the Cabinet

To prevent fire or shock hazard, do not tamper with internal components. Harman Kardon does not guarantee the tuner against performance degradation resulting from any modification.

If water, a hairpin, or wire accidentally enters the unit, unplug the power cord immediately and consult an authorized Harman Kardon service center. Using the unit under such conditions may cause a fire or shock hazard.

Cleaning

Remove dust by wiping the unit with a soft, dry cloth. If necessary, wipe with a soft cloth lightly dampened with mild soapy water; then wipe with a dry cloth. Never use benzine, thinner, alcohol, or other volatile agents, and avoid spraying insecticides near the unit.

HARMAN KARDON TU9600/TU9400 AM-FM STEREO TUNERS

Thank you for choosing a Harman Kardon tuner.

And congratulations. Your new unit is an exceptionally well-engineered product that will give you years of superb performance.

The special features of this tuner include:

■ Digital Synthesized Quartz-Locked Tuning

Quartz-locked tuning guarantees optimum sound quality by eliminating drifting and mistuning. A total of 24 AM and FM preset stations can be stored in memory, for one- or two-touch access.

■ Exceptional Sound Quality

The TU9600 and TU9400 provide low distortion, low noise, wide bandwidth, and excellent stereo separation. The high quality construction, grade of components, and layout provide exceptional audio signal purity.

■ Non-Volatile Memory

The preset memory of up to 24 AM and FM stations is stored indefinitely, even when the unit is disconnected from AC power.

■ Memory of Reception Attributes

When preset stations are set in memory, other reception attributes are also recorded. These include settings for stereo/mono and Hi-Blend, and on the TU9600, settings for Antenna, Active Tracking, and Fine Tuning. When stations are tuned using Preset buttons, the unit automatically sets all the pre-selected attributes.

■ Improved MPX Stereo Decoder

The FM stereo quality has been enhanced to provide lower distortion and wider separation. Your tuner also provides superior rejection of 19kHz pilot and 38kHz subcarrier noise.

■ Hi-Blend

This feature gives you more pleasant sound quality from weak stereo stations. In the past, the noise associated with such broadcasts was reduced by switching to monaural sound. Instead, Hi-Blend mixes stereo sound in the medium and low ranges with mono in the high frequencies (where most of the noise occurs). The result is low noise with a high degree of stereo sound.

■ Active Tracking/Fine Tuning

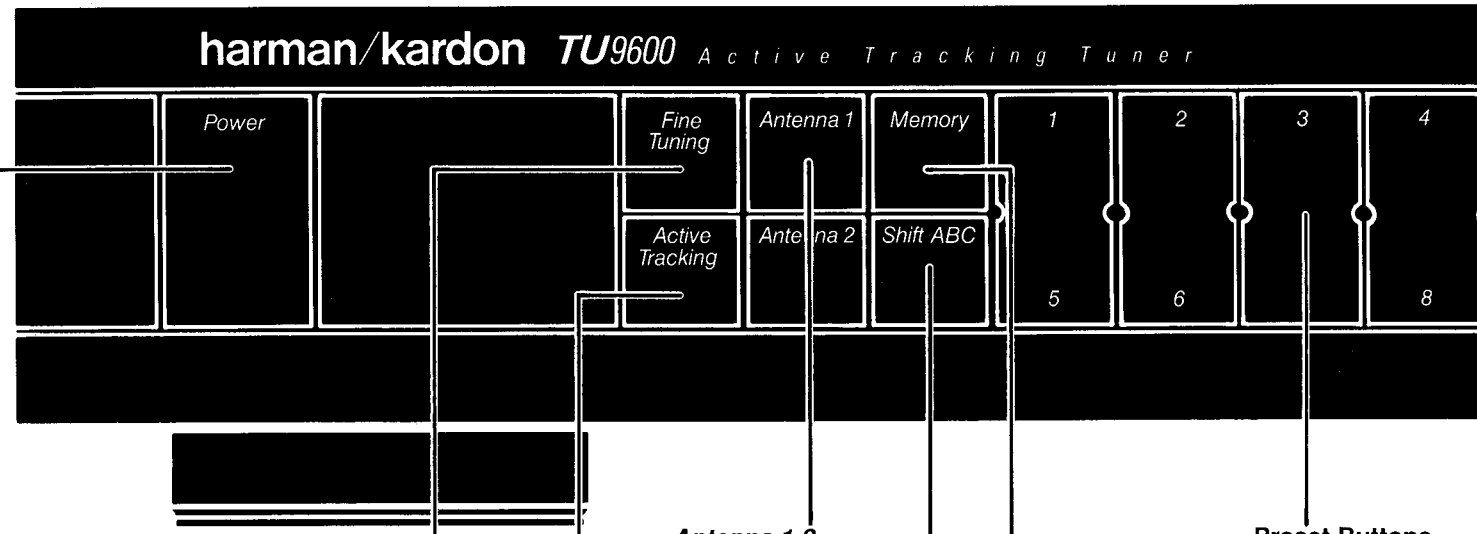
TU9600 only. These unique Harman Kardon features dramatically reduce the problem of signal interference from strong adjacent stations. Active Tracking circuitry provides higher signal selectivity while maintaining excellent stereo separation and very low Total Harmonic Distortion. Fine Tuning reduces interference even further, by "tuning away" from the interfering station.

■ Remote Control

TU9600 only. The advanced unit includes nearly every control function available on the unit itself.

To get the most from your new tuner, please read this manual carefully and follow its instructions for using your unit. Please keep the manual for future reference.

CONTROLS and DISPLAYS



***Power* Switch**
Press to turn the unit on and off.

Fine Tuning
TU9600 only. Use with Active Tracking to reduce interference from adjacent stations.

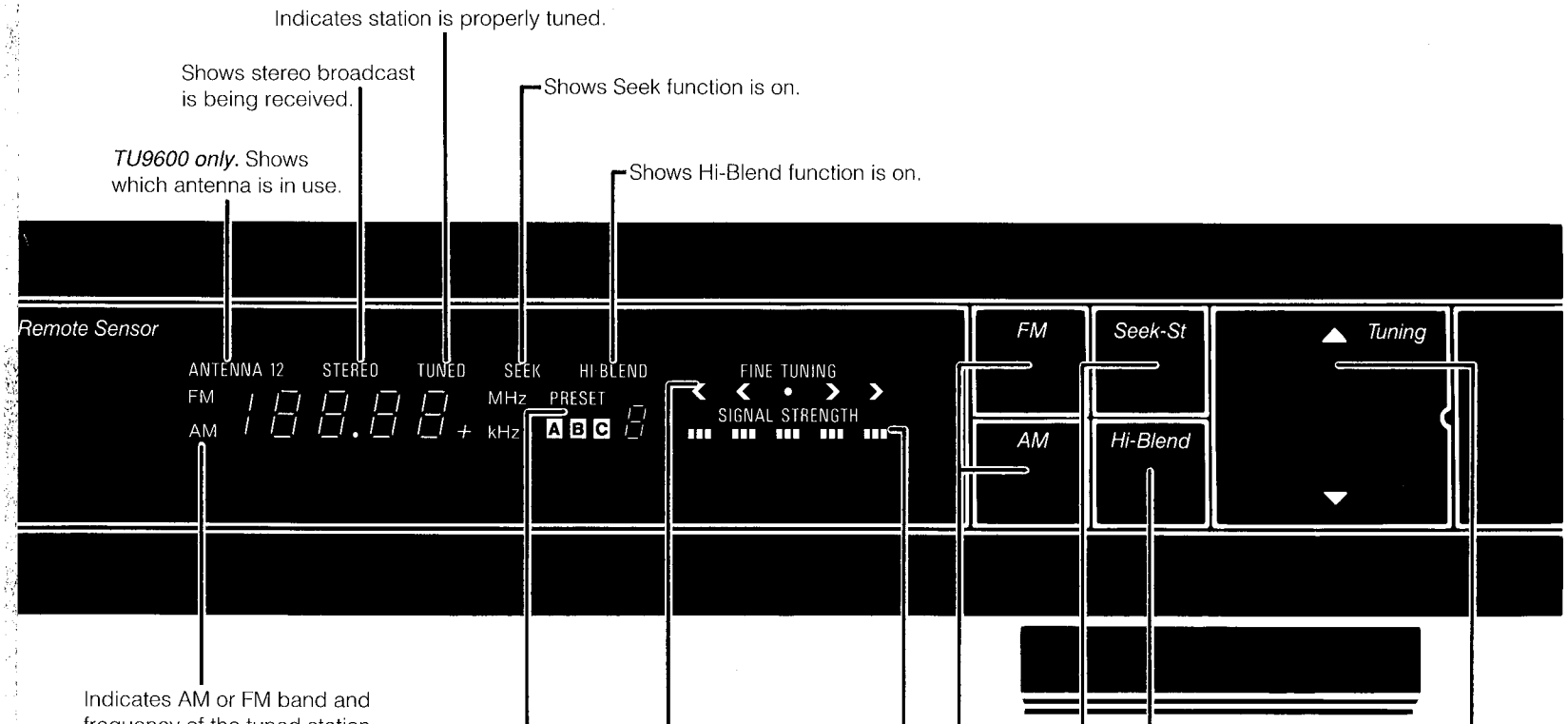
Active Tracking
TU9600 only. Press to reduce interference from adjacent stations.

Antenna 1,2
TU9600 only. When two FM antennas are connected to the unit, use these buttons to select desired antenna.

Shift ABC
Allows you to access 24 pre-selected stations using the 8 Preset buttons.

Memory
Press to set in memory a new preset station.

Preset Buttons
Press to access pre-selected stations.



Indicates AM or FM band and frequency of the tuned station.

Flashes during period when a station can be entered into the memory.

TU9600 only. Lights when Active Tracking is turned on. Arrows and center circle indicate Fine Tuning position.

Number of segments illuminated shows signal strength. When tuning stations or positioning antennas, adjust so that maximum number of segments is illuminated.

FM/AM

Press to select FM or AM reception.

Seek-St

Press on for Seek tuning in stereo, off for manual tuning in mono.

Hi-Blend

When tuned to a weak signal (in Seek-St mode), press on to improve sound quality.

Tuning

Press ▲ to tune to stations with higher frequencies; press ▼ for lower frequencies.

OPERATING INSTRUCTIONS

Tuning

Your tuner has special features designed to give you the best possible sound quality under a variety of conditions.

Seek-St

Begin with the ***Seek-St*** function on. ("SEEK" will light up on the display panel.) In this mode, pressing the ▲ or ▼ ***Tuning*** buttons causes the tuner to step up or down the broadcast band, stopping at the next *strong signal* it receives.

If you wish to locate a weak station, which the tuner skips over in Seek-St mode, only then should you turn the ***Seek-St*** function off. Pressing the ▲ and ▼ ***Tuning*** buttons in this mode allows you to tune to any desired frequency.

NOTE: When ***Seek-St*** is off, all broadcasts are received in mono. This eliminates the excessive noise that results when weak stations are received in stereo. When you tune to a new, stronger station, be sure to turn the ***Seek-St*** function back on in order to receive broadcasts in stereo.

Hi-Blend

If you tune to a stereo broadcast (in Seek-St mode) with a relatively weak signal, you may encounter excessive, unpleasant noise. If this happens, turn on the ***Hi-Blend*** function. ("HI-BLEND" will light up on the display panel.) In this mode, your tuner will blend stereo sound with less noisy monaural sound, for a more pleasing overall effect. When you turn to a stronger station, be sure to turn ***Hi-Blend*** off, to receive full stereo sound.

NOTE: When you enter a preset station in memory, the current settings of Seek-St and Hi-Blend are also recorded. Subsequently, whenever you tune a station by pressing a preset button, the tuner automatically switches to the pre-selected Seek-St and Hi-Blend settings for that station.

Active Tracking/Fine Tuning (TU9600 only.)

These features are designed to reduce signal interference that can occur when you tune into a weak FM station adjacent to a stronger station.

First, tune to the station you wish to hear. If you hear interference from an adjacent station, press the ***Active Tracking*** button. The words "FINE TUNING" and the circle beneath them will be illuminated, and the interference will be reduced or eliminated.

If some interference remains, begin pressing the ***Fine Tuning*** button to shift the receiving frequency away from the stronger station. Five Fine Tuning positions are possible, indicated by the four arrows and center circle on the display. (See diagram below.) Press the ***Fine Tuning*** button until you have found the position that produces the best sound.

NOTE: When you enter a preset station in memory, Active Tracking and Fine Tuning settings are also recorded. When a station is selected using a Preset button, the unit automatically tunes to the settings originally selected for that station.

Preset Buttons

Your tuner allows you to store 24 station settings and quickly access them, using the 8 Preset buttons along with the ***Shift ABC*** button.

The 24 preset stations are designated by the letter A, B, or C, followed by a number from ***1 to 8***. Any letter/number designation may be used for any AM or FM station, in whatever combination you choose.

To enter a station in memory.

1. Tune to the desired station.
2. Be sure Seek-St and Hi-Blend settings are in the desired position. (For TU9600, also check Active Tracking, Fine Tuning and Antenna settings.)
3. Press the ***Shift ABC*** button until desired *letter*, A, B, or C, appears on the display. (See diagram below.)
4. Press ***Memory*** button. The "PRESET" display flashes for about 8 seconds, during which a station can be entered into the memory.
5. Press the desired numbered Preset button.

To change a preset station.

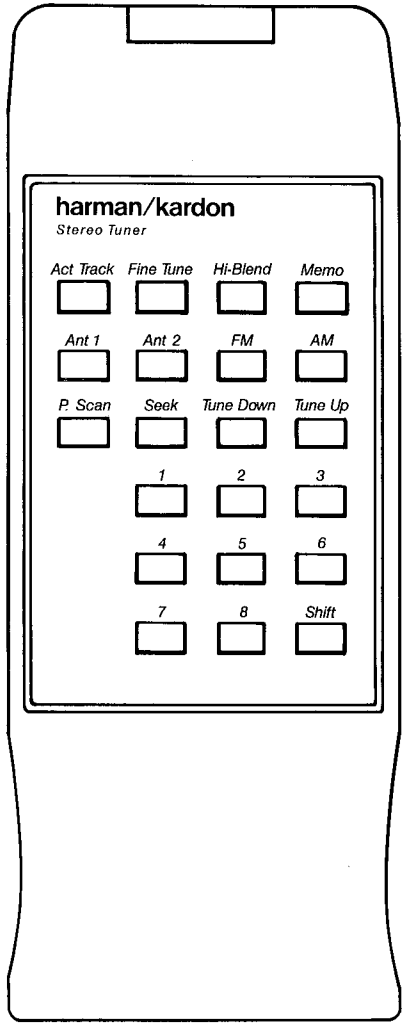
Simply enter the new setting. The old setting is automatically erased.

To access a pre-selected station.

First press the ***Shift ABC*** button until the appropriate *letter* appears on the display. (See diagram.) Then press the appropriate numbered Preset button.

NOTE: Preset stations are stored in non-volatile memory and are not erased by power failures or by unplugging the unit.

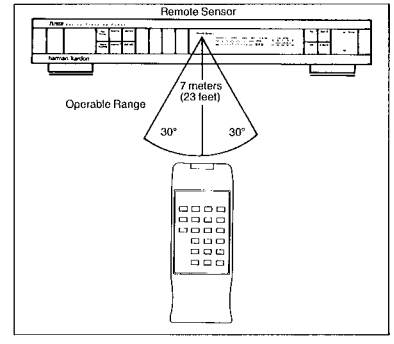
REMOTE CONTROL



The remote control unit (for the *TU9600 only*) provides the identical functions as the buttons on the front of your tuner, with two exceptions.

1. The remote unit does not have a ***Power*** switch. The tuner may be turned on and off at the unit itself, or it may be controlled remotely in the following way:
   (1) Plug the tuner's power cord into a *switched* AC receptacle in your preamplifier, integrated amplifier, or other stereo component equipped with its own remote control.
   (2) Leave the tuner turned on.
   (3) Turn the other component on and off using its own remote control unit. Tuner will turn on and off along with the other component.
2. A Preset Scan ("***P.Scan***") button appears on the remote control, but not on the tuner itself. When ***P.Scan*** is pressed, the unit tunes successively to each of the preset stations (in alphanumeric order) for 10 seconds each. To stop scanning, press ***P.Scan*** again, and the unit will remain tuned to the current preset station. Or stop the scan and tune to any desired station using either the ***Shift*** and *numbered* Preset buttons, or the ***Tune Up*** and ***Tune Down*** buttons.

The control unit operates effectively within a distance of 7 meters (23 feet) and within an angle of 30° from the tuner. Using the control near fluorescent lights may shorten this range, as will any dust or dirt that is allowed to accumulate on the front end of the remote control, or the "***Remote Sensor***" area of your tuner. Also avoid blocking the line of sight between tuner and remote.



The control unit is powered by two AA batteries, included with your tuner. When you replace weak batteries, replace both at the same time. When the remote is to be unused for an extended period, remove the batteries to prevent damage from corrosion.

If you wish to control your *TU9400/ TU9600* with an external infrared remote sensor, simply connect the wire from the remote sensor to the **REMOTE IN** jack on the back panel. A control wire may then be run from the **REMOTE OUT** jack to the Remote Input of another stereo component. Alternatively, if you have a stereo component with a built-in infrared remote sensor and a Remote Output jack, it may be possible to connect this jack to the **REMOTE IN** jack of your tuner. Not all components are compatible, but it will not hurt to experiment.

Once your *TU9400* is connected to an external infrared sensor, you will need a compatible remote control commander. One such commander is the remote control unit from Harman Kardon's *TU9600* tuner, available through Harman Kardon's Parts Department.

Harman Kardon also offers Masterworks™, a universal remote control that can be used not only with your tuner, but with other components as well, including TVs, VCRs, Cassette Decks and CD Players. Masterworks is available from your Harman Kardon dealer.

INSTALLATION

FM Antenna

Select the antenna that best meets your needs:

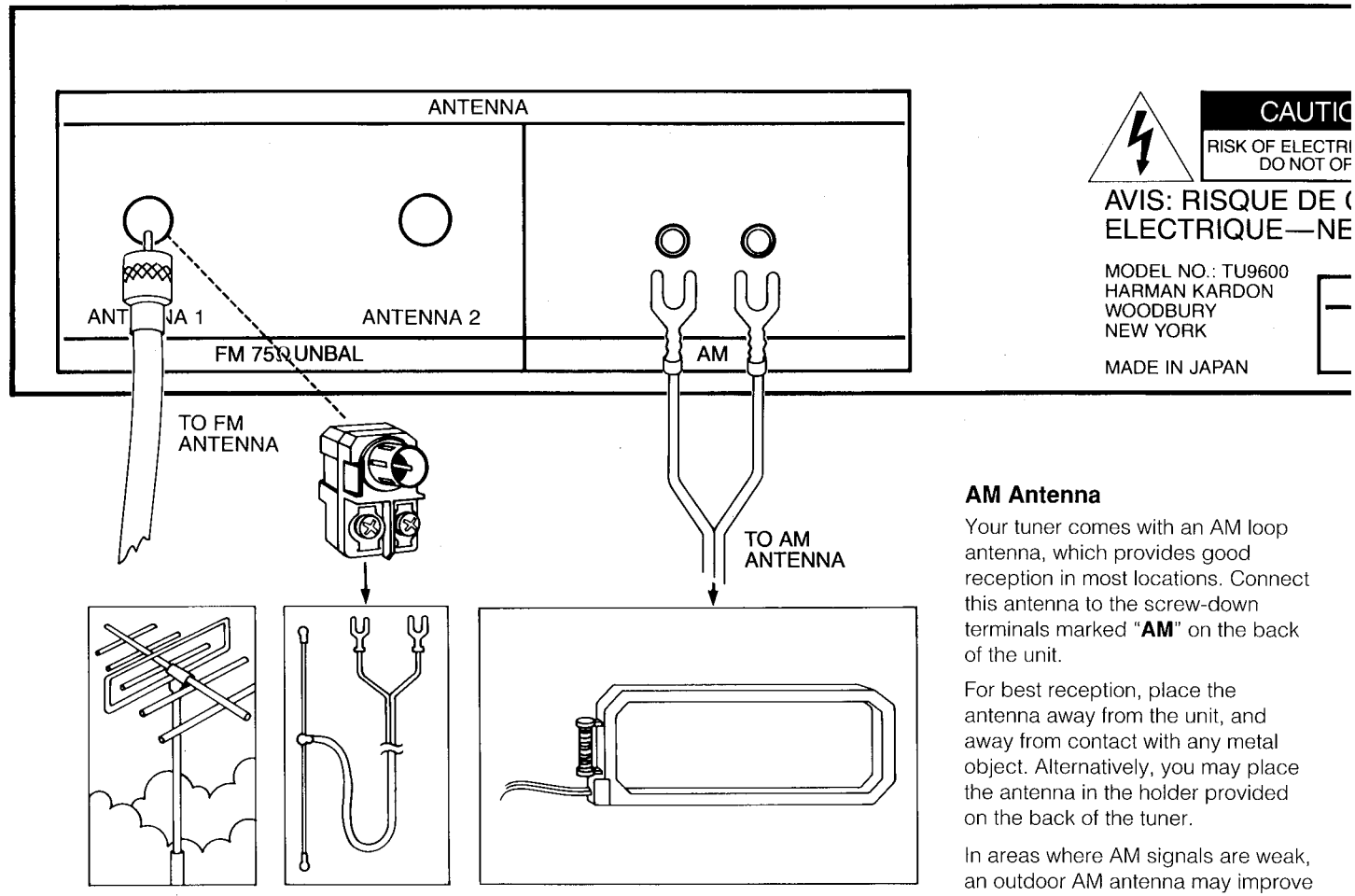
1. An indoor dipole antenna is supplied with your tuner. This will work well if you are located in a strong signal area.
2. Other indoor antennas are available, which may improve reception by offering greater positioning flexibility.
3. If reception is unsatisfactory using indoor antennas, install an outdoor antenna.
4. Or, you may connect to an FM cable antenna.

Connecting the antenna

Whatever type of antenna you choose, connect it to your tuner using the coaxial connector labeled "**FM 75Ω UNBAL**" on the back of the unit. (If your antenna does not have a coaxial connecting cable, use the supplied converter-connector to make the connection.)

TU9600 only. Two antenna connectors are supplied, allowing you to set up two separate sources of FM reception. The ***Antenna 1*** and ***Antenna 2*** buttons on the front of the tuner let you select the desired antenna for each station.

(NOTE: When you enter a preset station in memory, the Antenna setting is also recorded. When a station is then selected using a Preset button, the unit automatically switches to the Antenna originally selected for that station.)

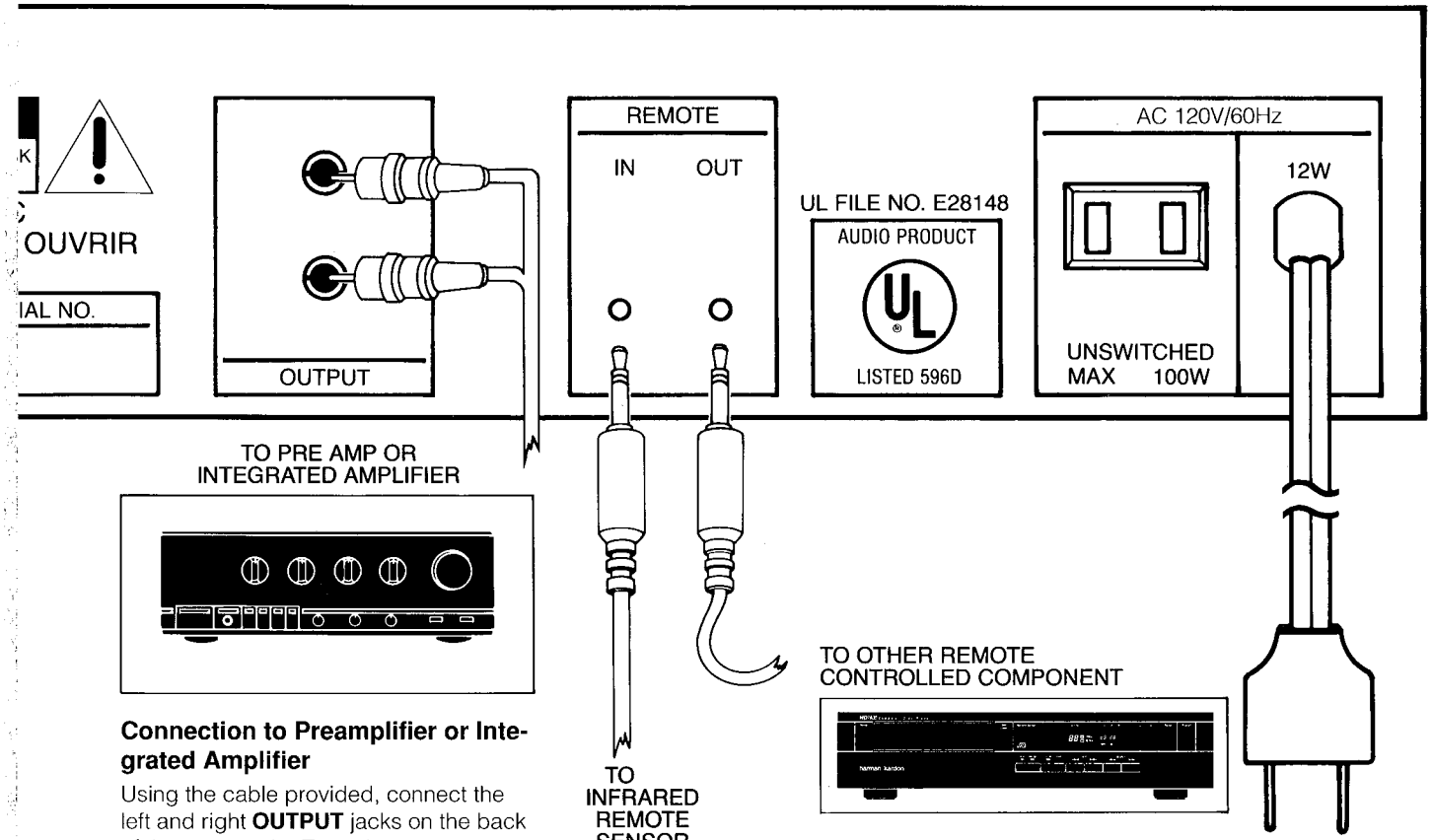


AM Antenna

Your tuner comes with an AM loop antenna, which provides good reception in most locations. Connect this antenna to the screw-down terminals marked "**AM**" on the back of the unit.

For best reception, place the antenna away from the unit, and away from contact with any metal object. Alternatively, you may place the antenna in the holder provided on the back of the tuner.

In areas where AM signals are weak, an outdoor AM antenna may improve sound quality. Connect this antenna to the screw-down terminals marked "**AM**", and connect a ground wire to the **AM GND** terminal.



Connection to Preamplifier or Integrated Amplifier

Using the cable provided, connect the left and right **OUTPUT** jacks on the back of the tuner to the Tuner input on your preamplifier or integrated amplifier. To avoid sound disturbances and possible damage to your speakers, be sure to push the plug all the way into their jacks.

NOTE: Before making this connection, unplug all the components of your stereo system from AC power outlets. Also be careful not to intertwine the connection wires with any power cord, as this can degrade sound quality.

AC Convenience Receptacle

If you wish, your turntable, tape deck, or other low power stereo component may be plugged into the back of your tuner. Power will be supplied to this other component whether your tuner is on or off.

NOTE: Do not plug in any component that requires more than 100 watts of power. Check the owner's manual of the component to find its power requirement.

TROUBLESHOOTING

This unit is designed for trouble-free operation. Most of the problems users encounter are due to operating errors. If you do have a problem, therefore, first check the chart below for a possible solution. Also check the rest of your stereo system, especially your amplifier, speakers, all wires and connections. If the problem persists, consult your authorized Harman Kardon service center.

Problem	Probable Cause	Remedy
Station Display does not illuminate when the ***Power*** switch is pressed.	• The power cord is not plugged into a live outlet.	• Make sure cord is plugged in securely. • Make sure the outlet is "live."
No sound is heard.	• The tuned frequency does not carry a broadcast. • The function or speaker switch of the amplifier is not set in the correct position. • The connection wires are disconnected or broken.	• Tune to a broadcasted station. • Check for correct amplifier settings. • Check the connections and wires.
FM sound has a large amount of interference. or The "STEREO" display is not fully illuminated. or Sound distorts and/or volume level becomes low.	• The antenna is improperly connected. • The antenna is poorly located or directed. • The transmitting station is too far away. • Broadcast signals reflected by nearby buildings or mountains are interfering with signals received directly from the transmitting station.	• Check antenna wires and connections. • Change the location, height, and/or direction of the antenna. • If an indoor antenna is being used, replace it with an outdoor antenna. • Use a more directional antenna.
Intermittent or continuous buzzing or hissing.	• Unit is being affected by nearby electric appliances (fluorescent lights, TV, motors, etc.).	• Place the unit farther away from these appliances. • Install noise filters on the appliances.
Stations cannot be preset.	• The "PRESET" display is not flashing when the desired Preset button is pressed.	• Repeat steps 1 - 5 on page 5 and re-enter desired station into the preset memory. Be sure that the "PRESET" display is flashing when a Preset button is pressed.
Station selection cannot be made by using the Preset buttons.	• Stations have not been entered into the memory. • Memory is not in the proper A, B, or C range.	• Enter stations into the memory as per steps 1 - 5 on page 5. • Use ***Shift ABC*** button to access previous memory entries.

SPECIFICATIONS

FM SECTION	*TU9400*	*TU9600*
Usable FM Sensitivity, Mono:	11.2dBf	11.2dBf (13.2dBf*)
50dB Quieting Sensitivity, Stereo:	37.2dBf	36.2dBf
FM S/N Ratio (65dBf) — Mono: Stereo:	82dB 75dB	82dB 75dB
Capture Ratio:	1.2dB	1.0dB
Alternate Channel Selectivity:	65dB	45dB (80dB*)
Adjacent Channel Selectivity:	5dB	5dB (30dB*)
IF Rejection:	80dB	80dB
AM Rejection, 45dBf:	50dB	65dB
Image Rejection:	47dB	47dB
Spurious Response Rejection:	75dB	75dB
THD (65dBf, 1kHz) — Mono: Stereo:	0.08% 0.09%	0.06% (0.15%*) 0.08% (0.18%*)
Stereo Separation (65dBf) 1kHz:	50dB	50dB (40dB*)
FM Audio Output Level/Load (75kHz DEV.):	2.0V/10k ohm	2.0V/10k ohm

**Active Tracking Mode*

AM SECTION	*TU9400*	*TU9600*
AM Sensitivity (External Antenna):	20μV	20μV
AM Alternate Channel Selectivity:	55dB	55dB
AM Image Rejection:	35dB	35dB
AM IF Rejection:	60dB	60dB
AM Signal-to-Noise:	50dB	50dB
AM Audio Output Level/Load: (30% Modulation)	350mV/10k ohm	350mV/10k ohm

DIMENSIONS Width x Height x Depth:	17-3/8" x 2-7/8" x 13-1/2" (442 x 73 x 342mm)
Weight:	7.5lbs. (3.4kg)

All features and specifications subject to change without notice.

Warranty and Service

If you have followed the suggestions in this manual and are reasonably sure that your tuner requires service, call the Harman Kardon dealer from which you purchased your Tuner. It is important that service be carried out only by a designated Harman Kardon Service agent to insure both proper service and to comply with the terms of the Limited Warranty.

Remember to keep your sales slip or receipt in a safe place since you will be required to show it for service during the duration of the Limited Warranty.

If you live in the U.S.A. and need further assistance, you can call Harman Kardon directly at 1-800-645-7484.